

Substitutes for Cotton, Wool and Jute

A great many substitutes for cotton, wool and jute are coming to the front. One is *Urtica Divica*, which is the common European species of the nettle. The fibre is long and silky and the Germans are said to have been using it for gun cotton, yarn and cloth for some time. England is now about to follow the example of the Teutons and a recent monograph on the subject published by the Liverpool Chamber of Commerce, says that prominent manufacturing firms in Lancashire, Glasgow, Leeds and Belfast have determined to make "nettle goods" on a large scale. It adds that:

The mechanical and chemical treatment of the nettle for the purposes referred to apparently offer no difficulties, but a systematic and amply supply of the product is the main essential. To provide for this a comprehensive survey has been made in rural areas of England, Wales, Scotland and Ireland, and the reports show that there are enormous areas, unfit for ordinary agricultural purposes, where the nettle is growing in abundance, and for the cutting and collection of which lucrative prices will be paid.

On the other hand, there are wide areas unfit for cultivation of any other kind, on which the nettle can be easily and systematically grown in abundance, offering a calculated return of about £25 per acre in two yearly crops. Farmers and landowners who have developed and harvested the test crops report that the branch of cultivation offers a substantial source of revenue, requiring comparatively little labor of an unskilled nature. On land which is practically waste nettle plantations are to be established, and proposals are under consideration for making this an attractive pursuit to discharge army men.

The machinery required for the transformation of the nettle into textile fibre is described as being simple and, generally speaking, existing machinery in most factories is suitable. The fibre can be spun by ordinary cotton spinning methods, and the method of bleaching and dyeing is the same.

The extraordinary estimated cheapness of the nettle crops, which will run to hundreds of thousands of tons, and in view of the falling off of cotton supplies, will meet the increasing demand for textile goods.

It is asserted that the great difficulty that has baffled inventors over fifty years has now been solved, and a perfectly successful process for degumming the nettle fibre, as well as other grasses of the same family, is now firmly established, and of great commercial value.

It is anticipated that the near future will see this industry developed in this country.

According to the Italian writers, it is believed Germany has found two satisfactory substitutes for gun cotton. Some genuine cotton, it is known, they get from Adana, in Turkey. But this supply is wholly inadequate, since it is estimated that 1,000 tons of cotton are being discharged from their rifles each day in the form of gun cotton.

Germany now produces two kinds of fibre, one from the hairy willow, the other from the typha plant or reed-mace, a bulrush. They are of unequal merit. The former is a substitute for jute as well as cotton, but prolonged cultural improvement of the plant is necessary before good fibre producing strains can be evolved.

Typha fibre, on the other hand, is equal to the best cotton. It is said that the material made from it will make Germany independent of the importation of raw cotton, jute and wool. The plant is cultivated on a vast scale, and production, backed by the Deutsche Bank, surpasses the supplies usually imported from America.

This form of cotton is used for munitions, while fibre for bandages and clothing is made from the willow and from white moss.

Germany is also spinning paper into yarn and weaving it into cloth as a substitute for cotton goods. The New York Sun quotes a letter asserting this from Edwin W. Thompson, American Commercial Attache at Copenhagen. He says:

It is a fact that in Germany they are spinning paper into yarn and weaving it into cloths of various kinds which are being printed and dyed in various ways to substitute for cotton or woolen goods. The industry has not yet assumed very large proportions, partly because of the lack of proper machinery for the purpose and partly because of the lack of labor in Germany.

As there is an actual shortage in Germany of cotton, wool and flax it will be necessary for them to utilize paper to a greater extent as fast as they are able to do so. The paper for this purpose is made from native wood and also from wood and stock im-

ported from Sweden.

One or two cotton spinning concerns in Sweden are taking up the matter, undertaking to change their machinery so that they can spin paper yarn instead of cotton. Considerable capital is now being invested in this line, but at present it is only in an experimental stage.

While the shortage of cotton in the United States is not yet sufficiently acute to induce the use of any of these substitutes, there is a great shortage of the burlap bagging that is made from the jute that we usually import from India and the need for something that will take its place has accordingly been met by the invention of "Saxolin," which is now being manufactured and sold in quantity by the Cleveland-Akron Bag Co. of Cleveland, Ohio. By way of promoting the practice of the economy that we are preaching we are glad to publish the following statement in regard to this new product furnished us by the manufacturers. We shall also be glad to make mention of any other substitutes for staple articles that are scarce and have become costly as part of our contribution toward the campaign for war conservation that is a universal duty. Of "Saxolin" the Cleveland-Akron Bag Co. say:

The new burlap substitute "Saxolin" is made of two pieces of heavy paper combined with an asphalt material, making a water-proof combination. In the manufacturing of this product it is softened and made

pliable so that the folding qualities of the paper are retained.

In tensile strength it tests equal to burlap used for a like purpose. In actual use by numbers of manufacturing institutions who have heretofore used burlap, "Saxolin" is making good. The four different weights will fill the places heretofore of different grades and weights of burlap.

At this time when it is necessary to resort to other products to fill the places of goods that cannot be secured in sufficient quantities, we must all accept the substitute, and in many cases we will most likely find the thing we substitute to be equal, if not the better, of the original article.

"Saxolin" cannot fill all the purposes of burlap, but in the great range that it can supply, it will aid to place the available supply of burlap in the channel most needed.

The use of burlap in large quantities for wrapping and baling purposes is pretty general among cotton mills, woolen mills, blanket manufacturers, mattress and bedding manufacturers for baling their products. Furniture is covered with paper and excelsior padding and wrapped with burlap and then crated for shipment. Machinery and machinery parts, electric motors and dynamos are wrapped for shipping in burlap; coils of wire, auto tires, are wrapped with narrow strips of burlap.

Burlap is now used in hundreds of cases where "Saxolin" will serve as well, or better, and cost less. The use of the substitute is therefore directly in line with the economy and conservation that we are all being called upon to practice.—Commerce and Finance.

Standard Bread Soon

Regulations prepared which will be of advantage to all concerned

The Food Control license system is being extended to all bread-baking establishments in Canada. After a careful survey of the situation conducted by Professor Harcourt, head of the Department of Chemistry in the Ontario Agricultural College, and a conference in Ottawa with representative bakers from all parts of the Dominion, regulations have been prepared and will become operative on March 1, standardizing the loaf in respect to size and certain ingredients. This action was made necessary in order to effect the greatest possible economy in the use of wheat flour. By stopping the manufacture of fancy loaves, the regulations will not only conserve wheat, but will also eliminate from the bread-baking industry many wasteful and extravagant practices which have grown up as the result of unrestrained competition and rivalry to outdo one another in respect of "service."

PROF. HARCOURT'S MISSION.

In order to have definite information relative to the baking industry, the Food Controller commissioned Professor Harcourt to visit every Province in Canada, to consult with the bakers, to explain the wheat situation to them and to secure their advice. Following these splendid meetings, Professor Harcourt reported that the visible supply of substitute cereals, over and above requirements for ordinary industrial purposes and for feeding livestock, was not sufficiently large to warrant the Food Controller to require the admixture of these other cereals along with wheat flour in bread-making. This judgment was confirmed by information from other sources.

Representative bakers were then called together at Ottawa to consider the whole problem and to recommend regulations which would, as far as possible, achieve the objects of the Food Controller. Thirty master bakers attended, including representatives from all parts of the Dominion. They proceeded in a fair, broadminded way to adjust their business to the necessities of the situation. Although the regulations will entail some hardship and perhaps, in some cases, temporary pecuniary loss, the bakers were all willing to do whatever the Food Controller required of them. Professor Harcourt attended the sessions of the Committee, over which Mr. Mark Bredin of Toronto presided.

ONLY ONE SHAPE OF BREAD.

The bakers' recommendations provide for the manufacture exclusively of a single pan loaf or multiple thereof, closely batched, with no "cutting" or "washing." A single exception is made in the case of rye bread, which is in use by the Jewish people. Bread containing not less than 35 per cent of rye flour, accordingly, may be baked on the sole of the oven, in either a round or a stick shape.

The following net weights, unwrapped, twelve hours after baking, were decided upon, all bread to be of the specified weights or in multiple thereof:

British Columbia—18 ounces but not to exceed 19 ounces.

Alberta, Saskatchewan and Manitoba — 20 ounces.

Ontario, (and Hull, Aylmer and Gatineau Point, P.Q., which are supplied from Ottawa) — 12 ounces and 24 ounces but not over 13 ounces and 25 ounces.

Quebec—24 ounces but not over 25 ounces.

It is also provided that rolls may be manufactured and sold only in units of specified weights.

INGREDIENTS ARE ALSO LIMITED.

Limitations are also recommended upon the quantities of certain ingredients which may be mixed with one barrel of 196 pounds of flour for bread making as follows:

Cane or beet sugar—not more than 2 pounds.

Malt extract or malt flour — not to exceed 2 pounds; if malt is not used an equivalent in weight of sugar to be permitted.

Shortening—not over 2 pounds.

Milk—not over 6 pounds of liquid skim-milk or its equivalent of dry milk.

The rules prohibit, for the period of the war, the wrapping of bread or the placing on it of a paper or other band. General regulations to govern all licenses manufacturing bakery products were also drafted. These require that only a reasonable profit should be taken on the manufacture or handling of any bakery products, and provision is made against speculative operations, hoarding of flour and waste. They prohibit the acceptance by the bakers of returns of bread or other bakery products.

FOOD CONTROLLER'S RECOMMENDATIONS.

In addition to preparing an Order embodying these regulations, the Food Controller has made certain recommendations to the bakers, trusting to their voluntary co-operation to see that they are carried out in so far as local circumstances will permit. These urge continuance of the manufacture of bread from Graham and whole wheat flour. They also call for the use of as large a percentage of substitutes for wheat flour as can be procured. Bakers are also asked to reduce deliveries wherever possible to one each day over each route and to consolidate deliveries in order to reduce the expense of distribution which is necessarily paid by the consumer in the price of the bread.

By providing for a standard loaf, unwrapped and of the simplest character consistent with wholesomeness, the Food Controller has ensured for the people of Canada bread at as low a price as it can possibly be made and distributed. The consumer will benefit by the regulations, while the bakers will be placed on a basis of equality and protected against unfair competition as well as being freed from many undesirable methods which have crept into the trade.